

Appl. No. : **10/606,265**
Filed : **June 25, 2003**

REMARKS

Applicant submits the present supplement to the "Response to Office Action..." filed on May 3, 2005. This paper is submitted to address the issues raised in the Office communication mailed on July 26, 2005.

Applicant respectfully requests the Examiner to reconsider the above-captioned patent application in view of the foregoing amendments and the following comments. As a result of the amendments listed above, Claims 4-48 remain pending. Claim 38 has been amended, and no claims have been added or deleted.

Discussion of Applied References

In response to the concerns raised in the July 26 Office communication regarding the need for arguments distinguishing the claims from the applied references, Applicant submits the following comments.

Axelson (US 2,846,165) attempts to create an outward cross flow above the upper surface of a wing tip by orienting a vertical foil above the upper surface of a wing tip in a divergent manner (rear end angled outward) with the intention of causing air to diverge outward in a direction that is parallel to the alignment of the vertical foil along the upper surface of the wingtip. However, Axelson's methods are counterproductive since this intended orientation creates a low pressure field along the inward surface of such vertical foil above the upper surface of the wingtip (above the low pressure surface of the wingtip). This low pressure field along the inward surface of the vertical foil above the wing tip can draw air in an inward direction above the upper end of the vertical foil as the higher pressure air along the outward surface curls over the upper end of the vertical foil toward the low pressure field along the inward surface. This "inward cross flow" above the upper end of the vertical foil is not directed according to Axelson's intended plan for creating an outward cross flow above the wingtip. Also, the inward directed cross flow created above the upper surface of the wingtip does not create an inward directed cross flow below the lower surface (high pressure surface) of the wingtip.

Axelson also orients a vertical foil below the lower surface (high pressure surface) of a wing tip in a convergent manner (rear end angled inward) with the intention of creating an inward cross flow in which the air follows the alignment of the convergent vertical foil below the wingtip. However, Axelson's methods are counterproductive since the convergent orientation of

the vertical foil beneath the wingtip creates a high pressure field along the inward surface of such vertical foil below the lower surface of the wing (below the high pressure surface of the wing), and this high pressure field along the inward surface of the vertical foil below the wing tip can draw in an outward direction below the lower end of the vertical foil below the wing tip as the inward high pressure field curls below such lower end toward the lower pressure outward surface to equalize and this resulting “outward cross flow” occurs in the opposite direction that Axelson plans to achieve. Furthermore, this outward cross flow beneath the lower end of the vertical foil does not create an inward directed cross flow beneath the lower surface of the wingtip.

Heal (US 2,418,301) shows a wingtip that folds upward above the upper surface of the wing to form a vertical foil which is arranged to create a low pressure field along the inward surface of the vertical foil above the wingtip. This low pressure field created along the inward surface of the vertical foil above the wingtip draws air in an inward direction above the upper end of the vertical foil and does not create an inward directed cross flow beneath the lower surface (high pressure surface) of the wingtip.

In contrast, the methods recited in claims 4 to 37 employ a vertical foil extending below the lower surface (high pressure surface) of a main foil near the tip of such main foil. The inward surface of the vertical foil below the tip of the main foil is arranged to form a low pressure surface along the inward surface of such vertical foil below the tip in order to create an inward directed lifting force on such inward surface that is capable of creating an “inward directed cross flow” in the wake behind the lower end of the vertical foil beneath the lower surface (high pressure surface) of the main foil.

While the vertical foils of Axelson and Heal extend to significantly tall vertical heights away from the surface of the wing that are well above the boundary layer along the surface of the wing and cannot add energy into such boundary layer, the methods recited in Claims 38 to 48 use an asymmetrically cambered vertical foil having a significantly short vertical height away from a surface that is arranged to create a vortex that is capable of entering into the boundary layer along such surface and adding energy to such boundary layer.

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Conclusion

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims. Accordingly, issuance of a Notice of Allowance is most earnestly solicited.

Applicant respectfully traverses each of the Examiner's rejections and each of the Examiner's assertions regarding what the prior art shows or teaches. Although amendments have been made, no acquiescence or estoppel is or should be implied thereby. Rather, the amendments are made only to expedite prosecution of the present application, and without prejudice to presentation or assertion, in the future, of claims on the subject matter affected thereby. Any arguments in support of patentability and based on a portion of a claim should not be taken as founding patentability solely on the portion in question; rather, it is the combination of features or acts recited in a claim which distinguishes it over the prior art.

The undersigned has made a good faith effort to respond to all of the rejections in the case and to place the claims in condition for immediate allowance. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call Applicant's attorney, Mark J. Kertz at (949) 721-6318 to resolve such issue(s) promptly.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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